



State of Tennessee
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

November 21, 2013

Mr. Darren Gore
Director of Water and Sewer Department
City of Murfreesboro
e-copy: dgore@murfreesborotn.gov
PO Box 1477
Murfreesboro, TN 37133

Subject: **NPDES Permit No. TN0022586**
Murfreesboro-Sinking Creek STP
Murfreesboro, Rutherford County, Tennessee

Dear Mr. Gore:

I am writing this letter as a follow up to the meetings between staff from our organizations. Julie Harse and Mike Thornton met with your staff on November 1, 2013 to discuss the results from the summer study of the East Fork Stones River. In reviewing the results provided by AquAeTer, the division has the following comments on the study.

- The instream dissolved oxygen dropped below the division's water quality criteria of 5 mg/L for the following monitoring sites: PO-1, DS-1, DS-2, DS-3.
- Based on the limitations of the testing methods, some of the orthophosphate concentrations were higher than the total phosphorous. The values for total phosphorous can still be utilized as an estimate of the phosphorus levels in the treated wastewater.
- The chlorophyll-a results indicate algae activity from monitoring station PO-1 through DS-7. The only chlorophyll-a standard in the division's standards is applied to Pickwick Reservoir at 18 µg/L. Many of the samples taken in the study exceed this value. Since the nutrient numbers at FH-1 exceed the existing nutrient stream loading, it is reasonable to assume that the addition of wastewater will increase the chlorophyll-a levels and algal growth in the stream.
- Streams that are not meeting the division's water quality criteria cannot have additional loading added to the stream that would be considered degradation (see rule below). The approval of a summer season discharge is not allowable under the division's current regulations.

"In waters with unavailable parameters, new or increased discharges that would cause measurable degradation of the parameter that is unavailable shall not be authorized. Nor will discharges be authorized in such waters if they cause additional loadings of unavailable parameters that are bioaccumulative or that have criteria below current method detection levels."(TN Rule 1200-04-03-.06(2)(a))

The division understands that the city wishes to continue with the winter study to determine the available winter capacity of the East Fork Stones River. The division is not opposed to continuing the study into the winter season. However in order for the permit design flow rate to be increased, the city must demonstrate that it has the ability to dispose of the increase in wastewater year round in accordance with the division's design criteria.

On November 12, 2013, John Strickland and Julie Harse took a tour of the wastewater plant and spray irrigation sites. The division understands that the spray sites do not currently have a flow meter or timer to quantify the amount of water being dispersed on the farmland. Recording the wastewater flow in conjunction with the wastewater plant effluent sampling for nitrogen and phosphorous will allow the city to quantify the nutrient loading being diverted from the West Fork Stones River, as well as to ensure that hydraulic capacity of soils utilized for effluent disposal is not exceeded.

Since the city is planning on conducting the winter study, the division will hold off processing the permit modification until the study results have been submitted to the division. If you have questions or need additional assistance, please contact the Nashville Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Miss Julie Harse at (615) 532-0682 or by E-mail at *Julie.Harse@tn.gov*.

Sincerely,



Vojin Janjić
Manager, Water-Based Systems

cc: Permit File
Nashville Environmental Field Office
Ms. Connie A. Kagey, NPDES Permit Section, EPA Region IV, r4npdespermits@epa.gov
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Mr. William F Dunnill, General Manager, Consolidated Utility District of Rutherford County, wdunnill@ cudrc.com
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Mr. Stan Wallace, Assistant Superintendent - STP, Sinking Creek Wastewater Treatment Plant, swallace@murfreesborotn.gov
Mr. Kevin Relford, Manager, Water Treatment Plant, Smyrna Water System
Mr. John Strickland, Superintendent, Sinking Creek Wastewater Treatment Plant, jstrickland@murfreesborotn.gov